



APPLICATION NO. 10/806,016

INVENTION: Multi-scale code division frequency/wavelet multiple  
access

INVENTORS: Urbain Alfred von der Embse

Clean version of how the ABSTRACT of the  
disclosure will read



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#### ABSTRACT OF THE DISCLOSURE

A new communications architecture combines orthogonal frequency division multiple access OFDMA and orthogonal Wavelet division multiple access OWDMA with multi-scale code division multiple access MS-CDMA. The new multi-resolution complex Wavelet application for OWDMA is a Wavelet generalization of OFDMA and forms multi-scale orthogonal channelization filter banks of individual or packet bursts of Wavelets. The new MS-CDMA spreads the users over the OFDMA/OWDMA channels over a wide frequency band and simultaneously spreads the users within each channel such that the resulting spectrum is equivalent to the current wideband CDMA spectrum and the architecture keeps the symbol rates equal to the individual channel frequency spacing for ease of synchronization and equalization to counter multipath. Variable transmit power control is supported for the different MS-CDMA groups of channels.